

Notice of Allowability

Application No.

09/938,114

Examiner

Rita Mitra

Applicant(s)

WANG ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/23/2001.
2. ☒ The allowed claim(s) is/are 20-31.
3. ☒ The drawings filed on 23 August 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: ____.
5. ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
(a) ☐ The translation of the foreign language provisional application has been received.
6. ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No. _____.
(b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
(c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 3 <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. _____ | 7 <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other _____ |

DETAILED ACTION

Status of the Claims

Application filed on August 23, 2001 is acknowledged. Claims 1-22 required a Restriction. During a telephone conversation with Attorney Michael Wise on December 8, 2003 a provisional election was made without traverse to prosecute the invention of claims 20-22. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-19 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention. Therefore, claims 20-22 are currently pending and are under examination.

An **Examiner's Amendment** to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Examiner's Amendments to the Specification

The continuity data has been entered on page 1 line 1, which reads as:
This application is a continuation of 09/058740, filed on April 10, 1998, now published US 6,489,451, which claims benefit of 60/043,886, filed on April 10, 1997.

Examiner's Amendments to the Claims

Claims 1-19 have been canceled.

Claims 20 and 21 have been amended to read as:

20. (Amended) A method for dissolving a thrombus in a mammal, comprising the step of administering to said mammal a pharmaceutically effective amount of an isolated, purified or recombinant antithrombosis enzyme [of claim 1] having the following characteristics:
- the molecular weight of said enzyme is between about 28 kD and about 32 kD when analyzed by polyacrylamide gel electrophoresis,
- the aspartic acid content of said enzyme is between about 2% and about 5%,
- the glutamic acid content of said enzyme is between about 2% and about 5%, and
- said enzyme hydrolyzes fibrin, dissolves blood clots, and prevents platelet aggregation.
21. (Amended) A method for treating [or preventing] a thrombosis related disease in a mammal, comprising the step of administering to said mammal a pharmaceutically effective amount of an enzyme of claim 20 [1].

New claims 23-31 have been added:

23. (New) A method for inhibiting human platelet aggregation induced by a fibrin agonist selected from the group consisting of ADP, epinephrine and thrombin, comprising the step of administering a pharmaceutically effective amount of an enzyme of claim 20.
24. (New) The method of claim 20, wherein said enzyme has no detectable hydrolysis effect on casein.
25. (New) The method of claim 20, wherein said enzyme comprises Ca^{++} .
26. (New) The method of claim 20, wherein the amino terminus of said enzyme is aspartic acid.

27. (New) The method of claim 20, wherein said enzyme comprises two polypeptide chains of about 14 kD to about 16 kD when analyzed by polyacrylamide gel electrophoresis.
28. (New) The method of claim 27, wherein one of said two polypeptide chains comprises an amino acid sequence, from left to right in the direction from the amino terminus to the carboxy terminus, represented by the formula, SEQ ID NO: 3: Asp-Cys-Ser-Ser-Asp-Trp-Ser-Ser-Tyr-Glu-Gly-His-Cys-Tyr-Lys-Val-Phe-Lys-Gln-Ser-Lys-Thr-Trp-Thr-Asp-Ala-Glu-Ser-Phe-.
29. (New) The method of claim 27, wherein one of said two polypeptide chains comprises an amino sequence, from left to right in the direction from the amino terminus to the carboxy terminus, represented by the formula, SEQ ID NO: 4: Asp-Cys-Pro-Ser-Glu-Trp-Ser-Ser-Tyr-Glu-Gly-Phe-Cys-Tyr-Lys-Pro-Phe-.
30. (New) The method of claim 27, wherein said one of two polypeptide chains comprises an amino acid sequence of SEQ ID NO: 2.
31. (New) The method of claim 20, wherein said enzyme is crystallized.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Michael Wise on January 6, 2004.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

The prior art of record does not teach or suggest a method for dissolving a thrombus in a mammal, comprising the step of administering to said mammal a pharmaceutically effective amount of an isolated, purified or recombinant antithrombosis enzyme having a molecular weight of 28 kD to 32 kD, with 2% to 5% aspartic acid and glutamic acid wherein the said enzyme hydrolyzes fibrin, dissolves blood clots, and prevents platelet

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aggregation. Further the said enzyme is used for treating a thrombosis related disease in a mammal by administering a pharmaceutically effective amount the said enzyme.

Therefore the claims are allowable over the art of record. .

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Claims 20-31 are allowed.

Inquiries

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Rita Mitra whose telephone number is (703) 605-1211. The Examiner can normally be reached from 9:30 a.m. to 6:30 p.m. on weekdays. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Dr. Christopher Low, can be reached at (703) 308-2923. Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Fax Center number is (703) 308-4242. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.



Rita Mitra, Ph.D.
January 6, 2003



ROBERT A. WAX
PRIMARY EXAMINER